REFUGEE INFLUX AND ITS IMPACT ON ECONOMIC GROWTH IN KENYA

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DECLARATION

This research project is my original work and has not been submitted to any other institution of learning for the award of an academic certificate.

…….. ……

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This research project has been submitted for examination with our approval as the student supervisors.

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DEDICATION

I dedicate this work to my Lord and Savior, Jesus Christ. I give him all the glory.

ACRONYMS

ADF	Augmented Dickey-Fuller
CPI	Consumer Price Index
DRC	Democratic Republic of Congo
ECM	Error Correction Model
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
IBT	Islamic Book Trust
ILO	International Labour Organization
IMF	International Monetary Fund
IRIN	Integrated Regional Information Networks
KIPPRA	Kenya Institute for Public Policy Research and Analysis
KLB	Kenya Literature Beaureu
KNBS	Kenya National Beaureu of Statistics
LDCs	Least Developed Countries
LM	Lagrange Multiplier
ODA	Overseas Development Assistance
OLS	Ordinary Least Squares
PP	Phillips Perron
SSA	Sub Saharan Africa
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNHCR	United Nations High Commission for Refugees
WDR	World Development Report

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ABSTRACT

Kenya has over the years competed well within the global economic market and experienced growth of its economy which is expected to continue, especially with the new constitutional dispensation. However, it still continues to have its share of setbacks, which may be a hinderance to such desired growth. The general objective of this study was to establish the impact of refugee influx on economic growth in Kenya. Specifically, this study sought to; establish the short run impact of refugee influx on economic growth in Kenya, determine the long run impact of refugee influx on economic growth in Kenya and establish the extent to which non-refugee related factors affect economic growth. The study adopted a time series methodology. Based on the findings, the study concluded that there was at least one co-integrating equation in the long run. It was also concluded that the lag GDP (denoting the previous period GDP) affects the current period GDP positively. This implies a higher GDP in the previous period leads to an increase in the current period GDP. Results also indicated that both in the long run and short run the number of refugees had a negative and significant relationship with GDP. Hence, an increase in the number of refugees resulted to a decrease in GDP. The results indicated that both in the long run and short run, labour had a positive and significant relationship with the GDP. Therefore, an increase in labour resulted to an increase in GDP. The other variables were insignificant both in the short run and long run which implies that change in capital and human capital will have no effect on GDP in the shortrun and longrun that could be due to the impact of inflation, Barro (1995). The study gave two recommendations based on the findings. First given that the effect of the number of refugees on GDP was negative and significant, it is recommended that Kenya should adopt strategies which aim at minimizing the number of refugees in a bid to increase aggregate economic growth. Second, given that the effect of labor on GDP was positive and significant, it is recommended that Kenya should encourage self employment, investments and innovation since increase in development, will call for increased labour force resulting in an increase in the aggregate GDP.

Key words: *Refugee Influx, Economic Growth, Human Capital, Non Human Capital and Labour*

CHAPTER ONE

INTRODUCTION

1.1 Background

Economic growth alludes to an expansion in the beneficial limit of an economy as an aftereffect of which the economy is fit for creating extra amounts of merchandise and administrations. As a rule, the way of life is measured by the amount of products and administrations accessible to us so that financial development is synonymous with an expansion in the general way of life (Romer, 2012).

Displaced people force an assortment of security, monetary and natural weight on host nations while in the meantime exemplify a noteworthy stream of assets as worldwide helpful help, financial resources and human capital. These evacuee assets speak to a critical state building commitment to the host state, yet security issues and different prevention hinder the state's capacity to get to and control them (Jacobsen, 2008).

As at the end of the year 2009, there were cloise to 42.3 million refugees in the world. The dispalacement was as a result of various factors such as disputes and human rights infringement. Twenty seven point one (27.1) million were within the countries while the rest 15.2 million were outside their nations. Displaced people face various challenges which could be political, security or humanitarian (World Bank, 2011).

In Australia, (Parsons, 2013) observes that refugees have various effects on the economy such as increased for goods and services. With refugees coming into the country, there could be greater avenues for increase in consumption patterns that could open doors for employment for locals and investments in areas covering such groups could increase as they open up. On the other hand, they could be recipes for decline in growth as in the case of Somalis entering the country that pose insecurity issues with investors shying off from doing so. As IRIN global report (2014) observes, there could be a dilemma as such between the merits and demerits of such refugees on the economy.

In the previous thirty years or more, African nations have encountered rehashed and managed mass inundations of displaced people. These infuxes are broadly are a big challenge especially to the least developed countries (Chimni,1998). For example, a report on the effect of displaced people on the national open consumption in Malawi amid the 1990s reasoned that noteworthy immediate and roundabout use identified with outcasts influenced the size of the administrations capital interest in the social and framework areas (Government of Malawi, 1990). Correspondingly, the Tanzanian government bears witness that the evacuee populace it has, turned into a weight to the country's improvement by worsening, if not making, a shortage of assets. It is additionally contended that the using basic products together and foundation has strained assets as well as relations amongst exiles and residents who end up going after those merchandise. This is frequently found in the utilization of touching area, water sources and transport courses (Ongpin, 2009).

In Kenya, a late effect assessment of displaced person camps which has one of the biggest evacuee populaces on the planet. A portion of the assets for operating the camp are allotted to framework speculations that advantage the host group. The effect of the Daadab camps on the neighborhood host group are broadly felt through exchanging open doors and lessened nourishment and product costs. Moreover, evacuee camps have created real neighborhood markets with significant buying power in connection to peaceful items, for example, milk and domesticated animals (NORDEC, 2010).

1.1.1 Economic Growth in Kenya

The Kenyan economy enlisted enhanced monetary execution in 2015 with a yearly development of 5.6 percent in GDP contrasted with 4.4 percent in 2011. The macroeconomic environment saw enhanced cost and conversion standard steadiness. However, per capita income growth, which is largely explained by labour market dynamics, had been relatively slow at 1.7 percent in 2012. The Kenyan labour market is characterized by a large share of informal sector employment, which partly explains the low levels of income per capital and productivity. The informal sector is generally

characterized by low productivity, vulnerability of employment and low incomes (KIPPRA, 2013).

Recent growth has largely been driven by growth in domestic household consumption and investment. Household consumption accounts for about 77.3 percent of GDP and grew by about 5.5 percent in 2012. The share of investment in GDP in real terms was about 27.6 percent and grew by about 9.6 percent. The corresponding share in normal terms was 20.1 percent, implying that the relative prices have been favourable for investment goods. All sectors of the economy witnessed positive growth in 2012 (KIPPRA, 2013).

Foreign direct investment has also resulted to increased economic growth in Kenya. For example, Kenya attracted FDIs worth US$ 259 million in 2012. Accessible information demonstrates that China is rising as a key wellspring of remote direct speculation for Kenya. However, there is potential to increase the contribution of growth of various sectors if the challenges that counter the nation are able to be addresses effectively (Amendolagine, Boly, Coniglio, Prota, & Seric, 2013).

1.1.2 Refugee Influx in Kenya

As indicated by UNCHR (2014), the most astounding number of refugees are concentrated in a portion of the poorest nations on the planet. An expansive number (86%) of such developments are into minimum created nations (LDCs). The nearness of evacuees exacerbates the officially winning financial, natural, social and on occasion, political challenges in these nations. Regularly such nations are gone up against by a blend of four of these elements. About forever their effect is generous.

In Kenya, the majority of refugees arrived here in the early 1990s and have been accommodated at two sites: Dadaab in northeastern Kenya and Kakuma in the northwestern part of the country with a figure of about 550,000 most of whom from this are of Somali origin with significant numbers including those from Ethiopia, South Sudan, Congo DRC and Burundi. The major factors contributing to this being war and political asylum. It is noteworthy that Kenya is among the leading host

countries for these among the developing nations with annual trends as below (UNHCR, 2014).

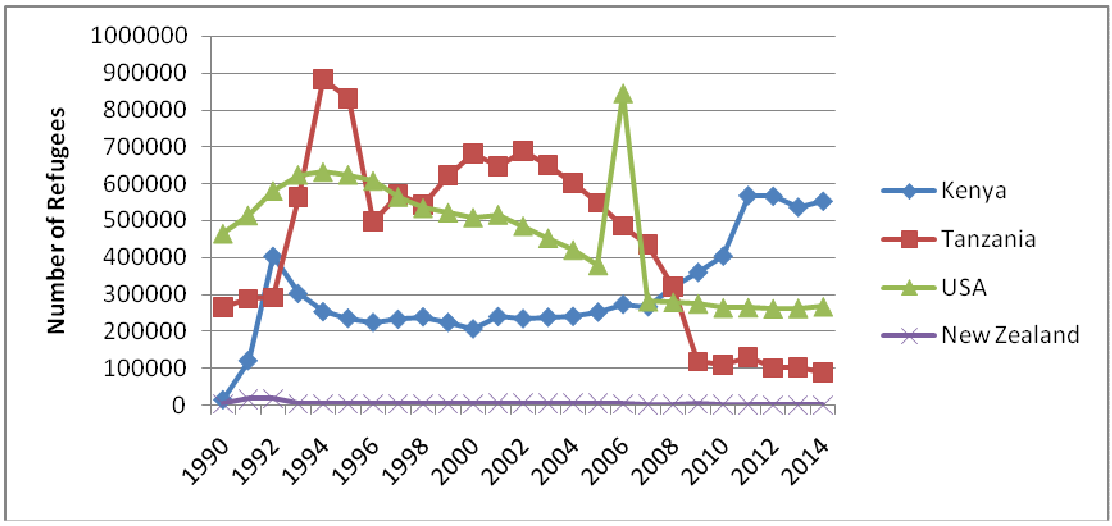

Figure 1.1: Refugee influx in Kenya and other selected nations

Characteristic of the observation, there could be a tendency for these to eventually move to the urban areas as Jolly *et al.,* (1973) observe, that it would be rational for the migrant to go to the urban centre and risk a period of unemployment or underemployment in the informal sector in the hopes of getting a regular well-paid job. This could be catapulted by those who have already settled in such areas accommodating these eventually as Ghai (1979) observes which could eventually affect growth outcomes.

Resource allocation has become an issue where the Government faces a complex challenge of applying scarce resources to address wellbeing issues here such as employment (KNBS, 2008). Though moral suasion could be adopted as has been tried in the past - there exists a vacuum in tackling the challenges herein.

1.2 Problem Statement

Evidenced with the independence of the nation of South Sudan and a knowledge of the many refugees living in Kenya and the more recent Somalia situation where thousands have come into the country due to the war on Al-shabab and with growth

projections in Kenya changing unpredictably (Mogire, 2011), there exists a gap in the analysis of the two factors and how they relate with each other.

With increase in population comes with it an increase in pressure on resources as this would tend to put pressure on the environment. Consequently, other vital areas creating the much needed avenues for economic growth would be affected and eventually undermine growth. Population pressure could be in the form of migrant channels such as through refugees moving in certain areas. On the other hand, one could argue that the influx of these refugees would be a recipe for growth in that they could be channels for greater consumption patterns, investment increase in the form of foreign direct investments all which could enhance economic growth significantly (Lim, 1996) observes.

Thus with diverse perspectives about the effect of refugee influx, there is need to find out the influence of refugee influx on economic growth independent of the entire population value as IRIN global report on the Ugandan model (2014) emphasise. The study thus sought to fill this intellectual gap and provide an understanding of the same. This study sought to answer the research question: what is the impact of refugee influx on economic growth in Kenya?

1.3 Research Questions

i. What is the impact of refugee influx on economic growth in Kenya?

ii. To what extent do non-refugee related factors affect economic growth in Kenya?

1.4 Objectives of the Study

The general objective of this study was to establish the impact of refugee influx on economic growth in Kenya with subsidiary objectives being,

- To establish the shortrun and longrun impacts of refugee influx on economic growth in Kenya.
- To establish the extent to which non-refugee related factors affect economic growth.

1.5 Significance of the Study

This study can be a source of solution to be implemented by government and non-governmental policy makers as it will outline the impact of refugees influx to economic growth so as to see how curbing any refugee crisis would affect the economic outlook. In addition, the study recommendations in the wake of the refugee situation in Kenya as with regard to the economic situation will be vital for achieving such ends as those envisaged in the vision 2030.

The aftereffects of the study will likewise contribute towards filling the data crevice on the topic. It is trusted that the discoveries of the study will make significant augmentations to the writing in the field of refugee influx and economic growth fortifying further interest.

1.6 Scope of the study

The study is aimed to evaluate refugee influx and its impact on economic growth in Kenya. The model estimates were based on data from various sources mainly UNHCR, IMF data bases and KNBS statistical abstracts. The data was for the period 1980 – 2014.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter discussed theories relevant to the study. Literature related to the study was also reviewed with the aim of identifying literature gaps. The literature review also guided the relevance of the study findings.

2.2 Theoretical Review

This section focuses on theories relevant to the study.

2.2.1 Theory of Economic Growth

Two main theoretical models of economic growth are discussed in this section. These include the Harrod-Domar growth model and the Solow growth model.

(i) The Harrod-Domar Growth Model

Evolving from the works of Keynes (1936) focusing on the short run aspect of investment is the Harrod-Domar growth model. This model looked into the relationship between savings, investment and output. The model contended that national funds rate must be equivalent to the results of the capital-yield proportion and the rate of the compelling work power if the economy was to keep its load of plant and hardware in parity with its supply of work so that the enduring development could happen.

(ii) The Solow Growth Model

This evolved from Robert Solow (1956) seminar paper on gowth and development. It is basically built on two equations which simply put are a production function (2) and capital accumulation equation (3). Where if having,

$$y = f(K) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (1)$$

y = output K - capital

$$\acute{K} = sy - (n + d)K \text{ ……………………………………….. } (2)$$

$\acute{K}$ = growth in capital

Eventually, with the interaction, growth is seen to be the result of such, by the observation of certain factors which affected the interaction. The model tries to explain growth mainly in terms of investments (n) and assumes a fixed capital coefficient (d) and constant marginal propensity to save (s).

Both the Harrod-Domar growth model and the Solow growth model are classical models of economic growth. The two models are best exemplified in a cob-douglas production setting.

iii) Cobb-Douglas Production Function

Economic growth is basically associated with the relationship between certain factors as affecting output in the economy. This, as Lim (1996) puts it, can simply be highlighted by adopting a simple production function known as the Cobb-Douglas production function for ease of understanding of such a relationship. The Cobb-Douglas production function may be presented as:

$$Q_t = T_t K_t^{\alpha} L_t^{\beta} \text{ ……………………….. } (3)$$

Where Q is real output, T an index of technology, K an index of the capital stock measured in constant prices and L an index of labor for given period t. Thus, the idea here being that eventually for output to grow- it is estimated by the level of increases in technology, capital and labor in the simplest form.

Later, Mankiw *et al* (1992), incorporated into the model human capital recognizing how different levels of labor exist with regard to differences in levels of education and skills in general. Due to its flexibility as a model, incorporating various economic

situations is possible and hence for our study, this can be a basis to input refugee influx as one of the inputs fit for our study.

2.3 Empirical Literature

The empirical literature was grouped along two methodological themes. The first theme was OLS based studies while the second was non-OLS based studies.

2.3.1 OLS Based Studies

Adopting loglinear modelling Sikod et al (2002) find a decay in Cameroon's economic growth is due to the country's poor quality of governance. With such they outline that to be the basis of economic growth inefficiency and not the underlying population pressure caused through growth in immigrant figures through such as refugees.

Sesay (2005), contends that the impact of evacuees depends generally on the financial standpoint of host nations. As such the impact on the economy as a whole would depend on how levelsof skills, government policy among others to dictate how these may be accommodated here.

Ndiaye (2014) directed a study on Capital Flight from the Franc Zone: Exploring the Impact on Economic Growth. The study utilized error correctional modelling as a part of watching the impact of such on capital flight . The study watched how these add to such where the key ramifications of these outcomes is that capital flight repatriation raises significantly the volume of ventures credit to the private part, the nature of establishments and residential reserve funds suggesting that these can help nations maintain increment in their monetary development.

Ndebbio (2004) conducted a study on Financial Deepening, Economic Growth and Development using OLS estimation. In his study, he argued how to improve economic growth effort through raising the volume of investment through attracting domestic and foreign investment through the already existence of international agencies which catalyse interest from native countries, sentiments also echoed via Whitetaker (2002).

Anyanwu (2006) conducted a study on Promoting of Investment in Africa using OLS estimation. In his study, he observes that for most of the 1980s and part of the 1990s, there has been a decrease in the GDP growth and increased population resulting from deteriorated of socio-economic conditions in Africa.

2.3.2 Other Methodologies Based Studies

Ahmed and Olwan (2012) endeavored to distinguish the financial, social and lawful states of Syrian displaced people dwelling in Jordan. The study test comprised of 105 meetings, which were led with the family unit heads of Syrian families living in four governorates; Irbid, Mafraq, Balqa and Amman. The respondents were requested that answer the 55 question review incorporated into the study poll. The consequences of this exploratory study uncovered that the Jordanian government experienced monetary difficulties and challenges as an aftereffect of facilitating Syrian outcasts on its region.

Lozi (2013) examined the effect of evacuees on the Jordanian economy measured by three macroeconomic markers: unemployment rate, outside direct venture and sustenance evaluating. A survey was utilized to discover the effect of refugees on political, social, and ecological of the host nation Jordan. The study show that the effect of displaced people on unemployment rate and sustenance costs in Jordan is certain, so the invalid theories are rejected while on account of the effect of evacuees on remote direct interest in Jordan, the invalid theory is acknowledged.

ILO (2013) evaluated the effect and recognized the consequences of an expanding number of Syrian evacuees in Jordan. The study concentrated on the occupation profile of displaced people and the potential effect of their financial interest on their host groups' vocations. The appraisal uncovered various notable discoveries and affirmed, to a substantial degree, the recounted proof about the living states of Syrian displaced people and their impact on host groups. The lion's share of Syrian outcasts are living in troublesome financial conditions with restricted employment assets.

James (2003) conducted a study on the role of international agencies and their impact on the Kenyan economy as a result of supporting such refugees. The study utilized

ADF. The study illustrated that there is a positive and measurably significant relationship between the offer of government consumption in GDP and offer of net dispensing of overseas development assistance (ODA). Additionally the part of FDI becomes an integral factor thus where Adeolu (2007) utilizing comparative tests clarified that despite the fact that the general impact of FDI on monetary development may not be critical, the segments of FDI do have a positive effect.

Brynen (2007) directed a study on the effect of Palestinian refugees.He reiteriated that the fact that an extensive number live in camps could mean irrelevant effect on neediness and in the end the economy. It may be the case that camp evacuees have lower salaries, poorer wellbeing and instruction levels than those outside the camps. In any case, camp refugees have better access to fundamental basic need because of UNHCR's nearness. This straightforwardly drives the conclusion that the camp populace don't confront homogeneously poor living conditions, nor do they constitute the fundamental neediness issue in many districts.

Xavier et al (2011) conducted a study on uncertainty and Investment Behaviour in the Democratic Republic of Congo. They adopted accelerator modeling that investigated both macroeconomic uncertainty(as a measure by the conditional variance of inflation) and political uncertainty. The study found out that refugee existance had a negative impact on investment rates and eventually the economic outlook.

As indicated by Sikod (2007), the effect of refugees influx would rely on the government where crosscountry estimation uncovered that great administration is irreplaceable in upgrading the viability of government operations and in animating private speculation, and accordingly development.

Grindheim (2013) directed a study on Exploring the effects of Refugee Camps on Host Communities. More particular, how the camp foundation has affected hosts family unit suitability and how they have adjusted appropriately. By meeting respondents from the host group, displaced person camp and outer on-screen characters of pertinence, the study discovered that there were financial, social, social, political and environmental effects.

Patricia (2004) directed a study on displaced people and their effect on financial development. She contends how with the nearness of global offices supporting the help endeavors of displaced people, the high volumes (1.5 million) of these exiles has unavoidably affected Tanzania's monetary circumstance and subsequently impacting to a degree the growth patterns.

2.4 Summary of Literature and Research Gaps

This chapter reviews the various theories that explain the independent and dependent variables. There exists a weakness from theoretical literature as shown by the Solow model. The assumption of a fixed capital coefficient and constant marginal propensity to save and showing the technological change being determined solely by exogeneous factors makes it difficult to see the role of a substantial change in population as in the way of refugee influx.

Wherein, methodological questions arise in the case of empirical literature and their accuracy over and above adoptation of classical approaches by these as opposed to more contemporary views of how such a relationship would be. For instance, Ahmed and Olwan (2012) used an cross sectional research design while this study will use a time series methodology. Xavier et al (2011) adopted accelerator modeling while this study will adopt Solow's model.

There exists a geographical gap in that, majority of the studies were not conducted in Kenya. For instance, IRIN global report on the Ugandan model (2014) looks at the Ugandan economy, ILO (2013) study focused on Syria, Lozi (2013) study was conducted in Jordan, Ahmed and Olwan (2012) based this in Jordan while Sikod et al. (2002) based his study in Cameroon. Therefore with little evidence of such a study in Kenya, this will seek to investigate the impact of refugee influx on economic growth in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology of the study, the research design and conceptual framework. The section further presents the study model, how it is estimated and how it can be used to project the impact of refugee influx on economic growth.

3.1.1 Research Design

The study aimed at investigating the impact of refugee influx on economic growth in Kenya. The study was motivated by the need to establish either an empirical association or non-spuriousness. The direction and strength of the relationship was key in this study.

3.1.2 Conceptual Framework

The conceptual framework is an exploration device expected to help a researcher to create mindfulness and comprehension of the variables under investigation (Kawakatou, 1998). For the purpose of this research, a conceptual framework was developed showing the influence of the moderating variable on the relationship between the independent and dependent variables.

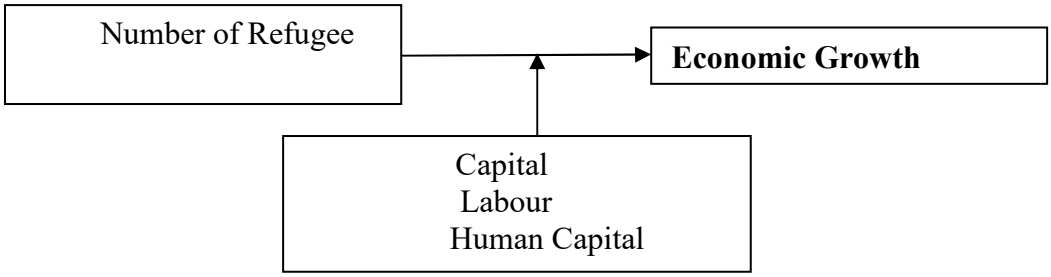

Figure 3.1: Conceptual Framework

3.2 Model Description

This study presented both the theoretical and empirical models. The theoretical model is a collection of concepts and their hypothetical interrelationships. Theoretical model borrowed heavily from theories presented in literature review. The empirical model on the other hand is the econometric model that is modified from theory.

3.2.1 Theoretical Model

The subject of refugees and their impact on economic growth has to a large extent been the basis of argument amongst the literary works covering this area. Patricia (2004) argues how with the nearness of global offices supporting the help endeavors of displaced people, the high volumes (1.5 million) of these exiles has unavoidably affected Tanzania's monetary circumstance and subsequently impacting to a degree the growth patterns.

Assuming the economy has reached its steady state, then because of immigration of refugees, the growth rate of an economy could rise. The Solow growth model as presented by Mankiw and Weil (1992), would show how increased population growth rate as a result of refugee immigration would impact on economic growth.

3.2.2 Empirical Model Specification

The first step of the empirical model incorporated the simple Cobb-Douglas production function such that:

Y (GDP) = f (Capital Stock, Labor)…..…….(4)

From Y = f (K,L)……(5)

Y being GDP, K being capital stock an L being labor and taking into effect, the role of human capital for the above model as derived via Mankiw and Weil (1992), to therefore have

Y = f (K,L,H)…….……..(6)

where H denotes human capital as a factor of production which invokes the role of skills as a factor here.

Further, the study adopted the framework employed by Rasmusen (2013) incorporating among others refugees, as part of immigrants into the USA.

The resultant model is:

$Y = f(K,L,H, R)$……..……..(7)

where R represents the presence of refugees

The Cobb-Douglas production function is transformed into log function. The specified model entailed the following equation

$LnY_t = Ln\ \beta_0 + \beta_1 LnK_t + \beta_2 LnL_t + \beta_3 LnH_t + \beta_4 LnR_t + e_t$ ……(8)

With apriori expection being that ,

$\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, > 0$, i.e. all factors have a positive relationship with real economic growth. Eventually our empirical model being,

GDP(LnY) = β_0 + β_1 (LnCapital) + β_2 (LnLabour) + β_3 (LnHumanCapital) + β_4 (LnNumber of Refugees) + e_t

3.3 Measurement of Variables

Variables were categorized according to the type of variable, measurement whether dependent /independent.

Table 3.1: Operationalization of Variables

Definition of Variable	Period	Measurement of Variable(s)	Data source
Capital	1980-2014	Government expenditure on non-human capital divided by CPI	IMF & KNBS Database

Definition of Variable	Period	Measurement of Variable(s)	Data source
Labour	1980-2014	The population that is actively engaged in production.	KNBS database
Number of refugees	1980-2014	Number of refugees	UNHCR Database
Human Capital	1980-2014	Government expenditure on education and health divided by CPI	KNBS Database
GDP	1980-2014	Real GDP = GDP at market price divided by consumer price index	KNBS Database

3.3.1 Expected Signs

For both human and non human capital, it would be expected that as the economy grows, the higher the investment rate is, the larger the bigger the relentless state capital stock and larger amounts of yield therefore increasing growth of the economy (Lim, 1996). However, in the event of increasing levels of for example inflation, this may hinder growth and the opposite could be true for a given case, Barro (1995).

From the theoretical point of view, as Lyn (1981) observes, we would expect a positive relationship between population growth and refugee influx on economic growth, as these may be catalysts for growth in the way of additional labor and greater consumption within the economy thus leading to economic growth.

3.3.2 Data Sources and Scope

The model estimates were based on data from various sources mainly UNHCR and IMF data bases and KNBS Statistical Abstracts. The data was for the period 1980 – 2014.

3.4 Model Estimation

This study used a time series regression model to evaluate the impact of refugee influx on economic growth in Kenya. Applying the standard OLS technique to non-stationary information arrangement can create 'spurious relapse'. That is, the OLS regression can give high R-squared, low Durbin-Watson (DW) measurements and significant t-estimations of the evaluated coefficients proposing a significant relationship between dependent and explanatory variables when in actuality they are totally disconnected.

With a specific end goal to make preparations for the likelihood of a spurious relationship while keeping up the level information/results, two primary methodologies offer sensible arrangements. To start with is the unrestricted error correction modeling (ECM) developed by Hendry and his co-researchers (Hendry, 1995). Second method is the co-integration approach spearheaded by Engle and Granger (1990). The Engle and Granger spearheading technique is suitable when managing non-stationary information that are incorporated of the same request, that is, all information arrangement are coordinated procedures of request 1. Then again, the ECM technique created by Hendry (1995) can be applied to data series that are integrated of different orders (Hendry, 1995).

3.4.1 Unit Roots

The fourth stage was to run unit root tests to test for stationarity of the data. The Augmented Dickey-Fuller (ADF) test was used to test the time-series characteristics of the data. The ADF tested the null hypothesis of non-stationarity against the alternative hypothesis of stationarity. The Phillips-Perron tests were also useful in testing the unit roots.

The ADF and Phillips-Peron test assume the following null hypothesis;

Ho: The variable is non stationary (i.e it has a unit root)

H_i*: The variable is stationary (i.e it has no unit root*)

3.4.2 Testing for Cointegration

The fifth stage involved testing of the existence of cointergrating equations. The Engel Granger method and the Johansen co- integration method were used. .

3.4.3 Error Correction Modelling

This study employed the error correction modeling (ECM) procedure of Hendry (1995). This was critical for establishing the shortrun relationships between the variables. This technique minimized the likelihood of evaluating spurious connections while holding long-run data without arbitrarily restricting the lag structure. The ECM additionally furnished assessments with substantial t-values even within the sight of endogenous explanatory variables (Inder, 1993).

3.5 Diagnostic Tests

The following diagnostic tests were performed before running the regression model.

3.5.1 Test for Multicollinearity

The test for Multicollinearity was conducted to establish whether the independent variables are correlated. In this case the study used correlation matrix as well as the variance inflation factors to establish whether multicollinearity existed.

3.5.2 Normality Testing

Normality testing included checking for anomalies in data. Data that has anomalies show significant skewness and kurtosis coefficient. Henceforth, skewness and kurtosis coefficient was utilized to test normality. The study used the Jacque Bera test.

3.5.3 Heteroscedasticity Test

Heteroscedasticity test was used to test whether the error term is the same across the observations. The test was conducted using the white tests which establishes whether the variation amongst sampling units of a variable is continous in a regression model . The condition can be corrected by applying corrected standard errors.

3.5.4 Autocorrelation Test

Autocorrelation test was run to establish whether the error terms are correlated across time. The LM test was run to test for the first order autocorrelation. To correct for autocorrelation additional lags were employed. The Durbin Watson statistic was used to identify the existence of serial correlation from a regression analysis of close to two which is an indicator that autocorrelation no longer exists (Kawakatou, 1998).

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION OF FINDINGS

4.1 Introduction

This chapter deals with the analysis of data. The objective of the study was to determine the impacts of refugees influx on economic growth in Kenya. The data analysis is in harmony with the specific objectives where patterns were investigated through descriptive analysis and inferential analysis which were then interpreted and inferences drawn on them.

4.2 Descriptive Statistics

This section provides results on measures of central tendency of the variables; GDP, capital, labour, Human capital and number of refugees being measured in the study. Results in Table 4.1 show that the overall mean of GDP was Ksh 15804.86 (million) which indicates the average of GDP in Kenya. The median of GDP was Ksh 15667.2 (million) which implies that half of the observations of the GDP had this value during the period 1980 and 2014. GDP had a standard deviation of Ksh 2310.19 .

The results show that the overall mean of capital was Ksh 3412.71 (million) which indicates the average of capital in Kenya. The median of capital was Ksh 3273.21 (million) which imply that half of the observations of the capital had this value during the period 1980 and 2014. The observations of capital had a standard deviation of Ksh 705.417.

The results show that the overall mean of labour was Ksh 5496.44 (million) which indicates the average of labour in Kenya. The median of labour was Ksh 4698.4 (million) which imply that half of the observations of the labour had this value during the period 1980 and 2014. The observations of labour had a standard deviation of 3838.19.

The results show that the overall mean of human capital was Ksh 1548.97 (million) which indicates the average of human capital in Kenya. The median of human capital was Ksh 1441.59 (million) which imply that half of the observations of the human

capital had this value during the period 1980 and 2014. The observations of human capital had a standard deviation of 374.807.

The results show that the overall mean of number of refugees was 302,350 which indicates the average of number of refugees in Kenya. The median of number of refugees was 234,665 which imply that half of the observations of thenumber of refugees had this value during the period 1980 and 2014. The observations of number of refugees had a standard deviation of 332,472.

Table 4.1: Descriptive Statistics

Indicator	GDP	Capital	Labour	Human capital	Nunber of refugees
Mean	15804.9	3412.71	5496.44	1548.97	302350
Median	15667.2	3273.21	4698.4	1441.59	234665
Maximum	21084.3	5372.22	12476.2	2395.42	1180088
Minimum	12273.2	2552.93	1190.8	1080.89	2980
Std. Dev.	2310.19	705.417	3838.19	374.807	332472

4.3 Trend Analysis

4.3.1 Annual Trend Analysis of Real GDP

Figure 4.1 shows the trend analysis of GDP for the period 1980 to 2014 for Kenya. The graph shows that the GDP for Kenya has been fluctuating though with an increasing trend. This can be explained by the fact that the level of inflation has been different all through. The level of inflation determines the value of Kenya's currency. This implies that time and inflation are not a good predictors of GDP.

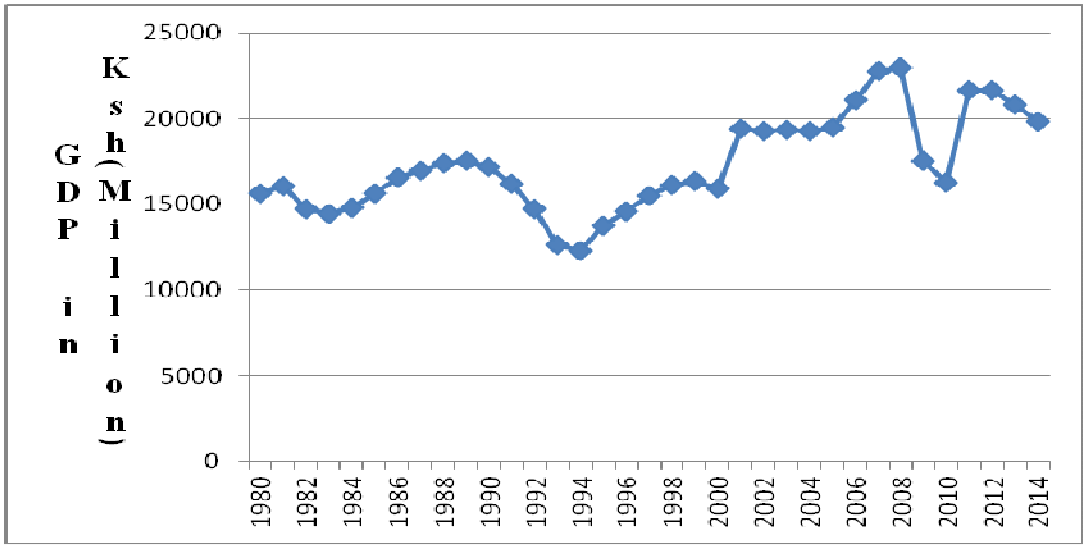

Figure 4.1: Trend Analysis of GDP (Ksh millions)

4.3.2 Annual Trend Analysis of Real Capital

Figure 4.2 shows the trend analysis of capital (non-human capital proxied by non human capital expenditure) for the period 1980 to 2014 for Kenya. The graph shows that the capital for Kenya has been increasing linearly since the year 1980. This can be explained by the fact that development in Kenya has been on an upward trend. This also implies that time is a good predictor of capital.

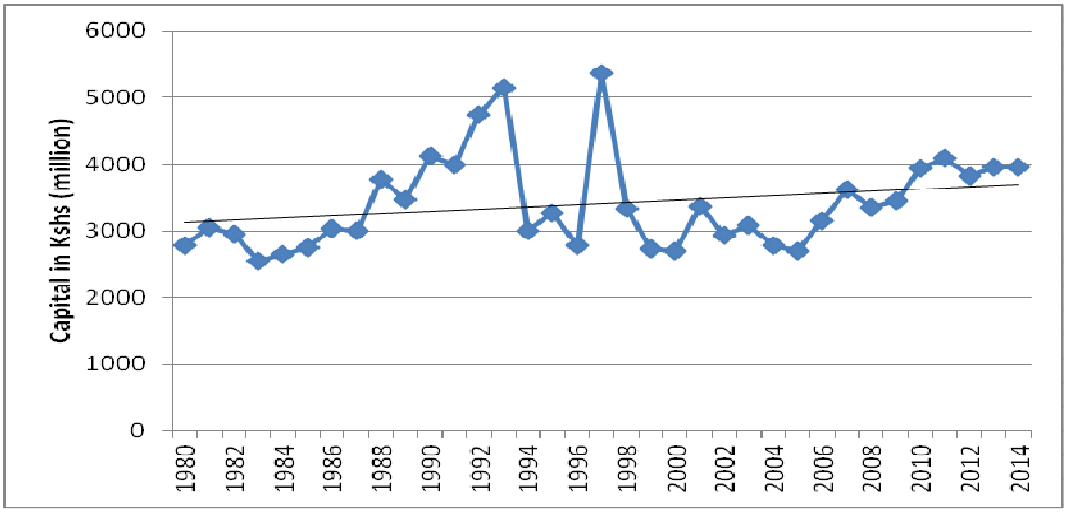

Figure 4.2: Trend Analysis of Capital (Ksh millions)

4.3.3 Annual Trend Analysis of Labour

Figure 4.3 shows the trend analysis of labour (wages) over the years 1980 to 2014 for Kenya. The graph shows that the labour for Kenya has been increasing linearly since the year 1980. This can be explained by the fact there has been in increase in the number of refugees in Kenya and thus leading to more labour provision.

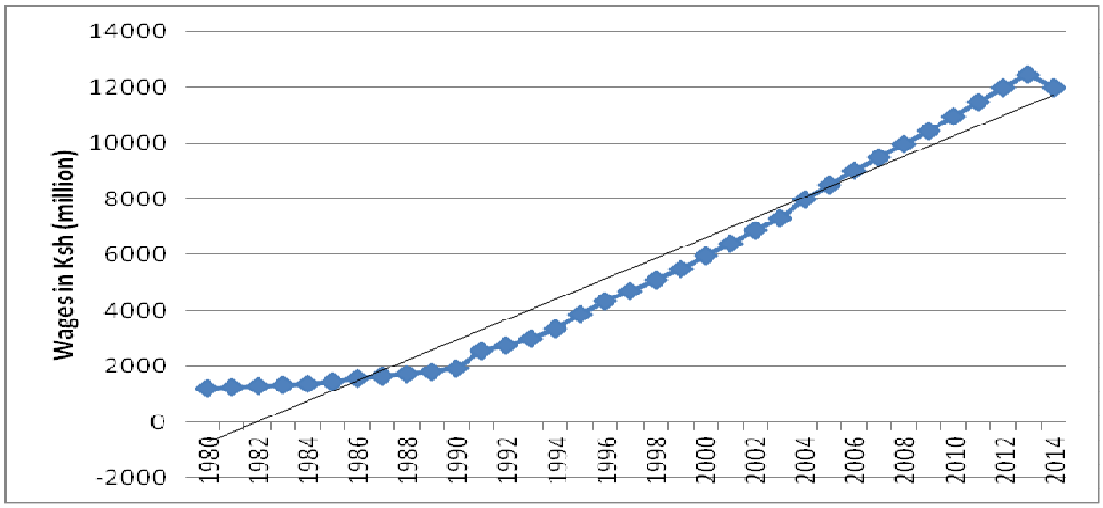

Figure 4.3: Trend Analysis of Labour (Ksh millions)

4.3.4 Annual Trend Analysis of Real Human Capital

Figure 4.5 shows the trend analysis of human capital (education and health expenditure) over the years 1980 to 2014 for Kenya. The graph shows that the human capital for Kenya has been increasing unsteadily since 1980. This can be explained by the fact that government expenditure on health and education have been increasing all through. For instance, government expenditure on health increases when there are disease outbreaks. Similarly, the government expenditure on education went up when free primary education was introduced in Kenya.

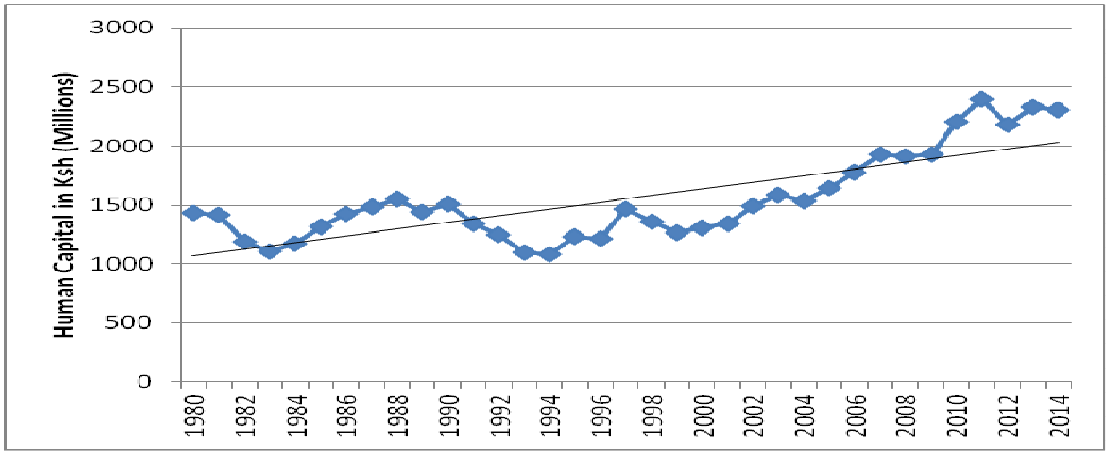

Figure 4.4: Trend Analysis of Human Capital (Ksh millions)

4.3.5 Annual Trend Analysis of Number of Refugees

Results in figure 4.5 show the trend analysis of number of refugees for the period 1980 to 2014 for Kenya. The graph shows that the number of refugees in Kenya has been fluctuating since 1980. This can be explained by the fact that the number of refugees coming to Kenya varies depending on the state of the countries where those refugees come from. Additionally, the government at times adopts measure to control the number of refugees. For instance, many Somali citizens who were residing in Kenya illegally but regarding themselves to be refugees were depoted to Somali in the year 1998 and 2010. This reduced the number of refugees in Kenya.

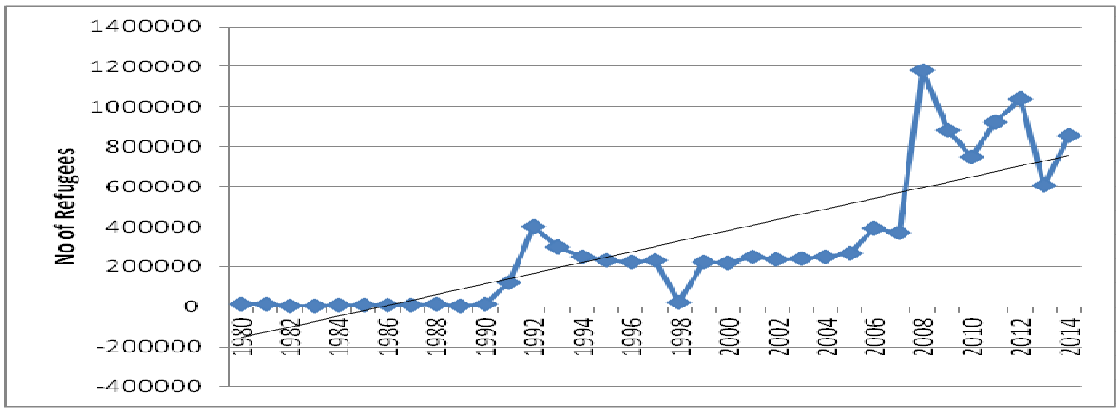

Figure 4.5: Trend Analysis of Number of Refugees

4.4 Pre-Estimation Tests

Pre-estimation tests was conducted before conducting a regression model. The pre-estimation tests conducted in this case were the multicollinearity and unit root tests. This was performed to avoid nonsense correlation results from being obtained.

4.4.1 Test for Multicollinearity

According to William *et al.* (2013), multicollinearity refers to the presence of correlations between the predictor variables. In severe cases of perfect correlations between predictor variables, multicollinearity can imply that a unique least squares solution to a regression analysis cannot be computed (Field, 2009). Multicollinearity inflates the standard errors and confidence intervals leading to unstable estimates of the coefficients for individual predictors (Belsley *et al*., 1980). Table 4.2 shows that there exist multicollinearity between human capital and labour, between number of refugees and labour, between number of refugees and human capital. The presence of multicollinearity was controlled by using white heteroscedasticity test to produce robust standard error.

Table 4.2: Correlation Matrix

Variable	GDP	Capital	Labour	Human capital	Nunber of refugees
GDP	1				
Capital	-0.3352	1			
Labour	-0.1172	0.181	1		
Human capital	-0.1855	0.28174	0.85012	1	
Number of refugees	-0.4174	0.32767	0.85586	0.77921	1

4.4.2 Unit root test

Before testing the relationship and co integration between the time series, the initial step was to check the stationarity of the variables utilized in the model. The study used Augmented Dickey-Fuller (ADF) test to test for stationarity. The test results of the unit roots (intercept only) are presented next. Table 4.3 indicated that capital was stationary at 1%, 5% and 10% levels of significance. The results also show that GDP,

labour, human capital and the number of refugees were non-stationary at 1%, 5% and 10% levels of significance. This calls for first differencing of the non-stationary variables.

Table 4.3: Unit root tests-Level

Variable name	ADF test	1% Level	5% Level	10% Level	Comment
GDP	-1.3975	-3.6394	-2.9511	-2.6143	Non Stationary
Capital	-3.7412	-3.6394	-2.9511	-2.6143	Stationary
Labour	2.22756	-3.6394	-2.9511	-2.6143	Non Stationary
Human capital	0.04791	-3.6394	-2.9511	-2.6143	Non Stationary
Number of refugees	-1.4226	-3.6394	-2.9511	-2.6143	Non Stationary

Table 4.4 shows the unit root results after first differencing. This implies that GDP, capital, labour, human capital and number of refugees became stationary on first difference.

Table 4.4: Unit root tests After First Differencing

Variable name	ADF test	1% Level	5% Level	10% Level	Comment
GDP	-8.7334	-3.6537	-2.9571	-2.6174	Stationary
Capital	-7.1196	-3.6793	-2.9678	-2.6230	Stationary
Labour	-5.2401	-3.6537	-2.9571	-2.6174	Stationary
Human capital	-6.2783	-3.6617	-2.9604	-2.6192	Stationary
Number of refugees	-7.1906	-3.6702	-2.9640	-2.6210	Stationary

4.5 Post-Estimation Tests

After running the specified regression model the test for normality, heteroskedasticity and autocorrelation were conducted so as to ensure all the ordinary least squares assumptions are not violated. Co integration test was also conducted to check whether the error term generated from the long run model was stationary. A stationary error term implies that co integrated relationship between long run variables exist. In addition the presence of co integration indicates that there exists an underlying short run relationship. Such a short run relationship can be modeled through an error correction modeling approach. The purpose of a error correction modeling approach

is to link the long run relationship to the short run relationship through an error term correction term.

4.5.1 Normality Test

The Jarque-Bera test was also used to test the normality of the residual. Figure 4.6 below indicates that the residuals originating from the model were normally distributed. This implies that the data is ideal for parametric analysis such as regression analysis. This was supported by a Jarque-Bera statistic of 0.275 and a significance of 0.872.

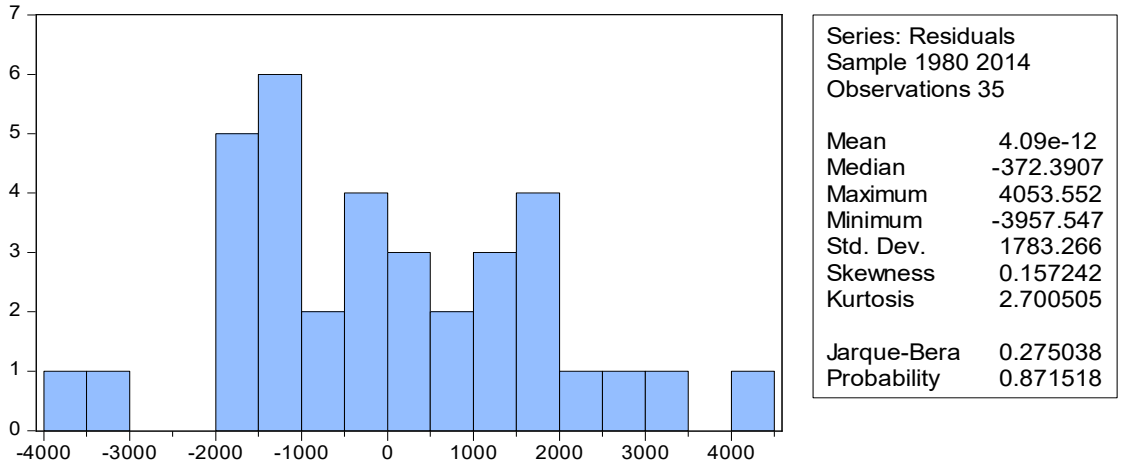

Figure 4.6: Jarque-Bera Normality Graph

4.5.2 Heteroscedasticity

Ordinary least squares (OLS) assumption stipulates that the residuals should have a constant variance (i.e. they should be Homoskedastic). Heteroscedasticity test was used to test whether the error term is the same across the observations. The null hypothesis was that the data does not suffer from heteroskedasticity. The null hypothesis was not rejected at a significance of 0.05 since the reported value was 0.293. This implied that the error term was homoscedastic and thus did not violate OLS assumptions.

Table 4.5: White Heteroscedasticity Test

F-statistic	1.29873	Prob. F(4,30)	0.2929

4.5.3 Serial Correlation/Auto Correlation

Serial correlation tests were conducted to test the correlation of error terms across time periods using the Breusch-Godfrey serial correlation LM test. The null hypothesis was that no first category auto correlation exists. The significance of 0.0077 show in Table 4.6 depicted that the null hypothesis be reject and conclude that serial correlation does not exist. This implies that it was not critical to include lagged variables to correct for autocorrelation.

Table 4.6: Breusch-Godfrey Serial Correlation LM Test

F-statistic	5.82781	Prob. F(2,28)	0.0077

4.5.4 Co-integration Tests

Then cointegration of the variables was tested using Johansen test of cointegration. Table 4.7 reveals that there is at least 1 co integrating equation as supported by a trace statistic of 93.1699 at a p value of 0.0017. This implies that all the variables in the model estimating GDP do converge to an equilibrium in the long run (i.e. are co-integrated).

Table 4.7: Johansen Co-Integration test

Hypothesized No. of CE(s)	**Eigenvalue**	**Trace Statistic**	**0.05 Critical Value**	**Prob.**
None *	0.73128	93.1699	76.9728	0.0017
At most 1	0.44541	49.8048	54.079	0.114
At most 2	0.34714	30.3502	35.1928	0.1517
At most 3	0.29884	16.2793	20.2618	0.1617
At most 4	0.12916	4.56384	9.16455	0.3346

4.6 Regression Results on the Impact of Refugee Influx on Economic Growth

The long run results presented in Table 4.8 are generated from the non-stationary variables. The model R squared was 0.7751. This implied that the goodness of fit of the model explained 77.51% of the variation in GDP was explained by the independent variables. The overall model was significant as illustrated by an F statistic of 19.3057 (significance = 0.000). This shows that the independent variables were good in predicting the GDP.

The lagged GDP (denoting last years GDP) was positive and significant. (The lagged GDP coefficient reported is 0.80254 and its probability 0.000). This implies that in the long run a unit rise in the lagged GDP results to a rise in this years GDP by 0.80254 units.

The findings also reveal that in the long run, capital has a negative but insignificant relationship to GDP. (The capital coefficient reported is -0.0991 and its probability 0.4105). This is an indicator that an increase or decrease in capital (non human capital) has no effect on GDP.

Table 4.8 indicates that in the long run, labour is positively and significantly related with GDP. (The labour coefficient reported is 0.1779 and its probability 0.0448). This infers a unit rise in labour prompts a rise in GDP by 0.1779 units.

Table 4.8 also indicates that in the long run, human capital is positively and insignificantly related to GDP. (The human capital coefficient reported is 0.1772 and its probability 0.2516). This depicts that an increase in human capital by has no effect on GDP.

Further, Table 4.8 shows that in the long run, the number of refugees is negatively and significantly related with GDP. (The number of refugees coefficient reported is -0.0732 and its probability 0.0406). This infers that a unit rise in number of refugees results to a decrease in GDP by 0. 0732 units.

Table 4.8: Long Run Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LagLn_GDP	0.80254	0.10984	7.30638	0.000
Ln Capital	-0.0991	0.11867	-0.8347	0.4105
Ln Labour	0.1779	0.08495	2.09425	0.0448
Ln Human Capital	-0.1772	0.15154	-1.1691	0.2516
Ln Number of Refugees	-0.0732	0.03423	-2.14	0.0406
C	11.1251	1.19059	9.34425	0.000
R-squared	0.77515	Mean dependent var		9.65791
Adjusted R-squared	0.735	S.D. dependent var		0.14668
S.E. of regression	0.07551	Akaike info criterion		-2.1703
Sum squared resid	0.15965	Schwarz criterion		-1.901
Log likelihood	42.8955	Hannan-Quinn criter.		-2.0785
F-statistic	19.3057	Durbin-Watson stat		1.90301
Prob(F-statistic)	0.000			

4.7 Discussion of the Error Correction Model Results

Since the variables in the model are cointergrated, an error-correction model linking the short-run and the long-run relationships can be formulated. To come up an error correction term, residuals from the cointegrating regression were used (lagged residuals) which was then integrated into the short-run model. The specific lagged residual term is LAGRESIDUAL. Results are as presented in table 4. 9.

The lagged GDP (denoting last years GDP) was positive and significant. (The lagged GDP coefficient reported is 0.14229 and its probability 0.0006). This infers that in the short run a unit rise in the lagged GDP results to an increase in this years GDP by 0.14229 units. Results revealed that in short run capital is positively but insignificantly related with GDP in the short run. A regression coefficient of 0.02986 probability = 0.6065) depicts that a unit rise in capital has no effect on the GDP in the short run.

Results revealed that labour have is positively and significantly related to GDP in the short run. A regression coefficient of 0.42982 (probability = 0.0124) iinfers that a unit

increase in labour increases the GDP by 0.42982 units. Results also revealed that the human capital is positively but insignificantly related with GDP in the short run . A regression coefficient of 0.06852 (probability = 0.7043) predicts that a unit rise in human capital has no effect on the GDP in the short run.

Further, results revealed that the number of refugees is negatively and significantly related to GDP in the short run. A regression coefficient of -0.0357 (probability = 0.019) infers that a unit rise in the number of refugees decreases the GDP by 0.0357 units. The error correction term measures the speed of adjustment to the long run equilibrium in the dynamic model. The error correction term LAGRESIDUAL has the expected sign and is significantly negative (-1.6573, probability = 0.0048). This result implies that there is a negative gradual adjustment (convergence) to the long run equilibrium. The coefficient of (0.0244) indicates that 2.44% of the disequilibria in short run GDP achieved in one period are corrected in the subsequent period. The other short-run variables however were insignificant.

Table 4.9: Error Correction Model/Short-Run Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LagLn_GDP	1.4229	0.36695	3.87762	0.0006
Ln Capital	0.02986	0.05727	0.52143	0.6065
Ln Labour	0.42982	0.15987	2.68852	0.0124
Ln Human Capital	0.06852	0.17857	0.3837	0.7043
Ln Number of Refugees	-0.0357	0.01429	-2.5011	0.019
LAGRESID	-1.6573	0.53771	-3.0822	0.0048
C	-0.0244	0.01646	-1.483	0.1501
R-squared	0.50433	Mean dependent var		-0.0068
Adjusted R-squared	0.38994	S.D. dependent var		0.07994
S.E. of regression	0.06244	Akaike info criterion		-2.5234
Sum squared resid	0.10137	Schwarz criterion		-2.206
Log likelihood	48.636	Hannan-Quinn criter.		-2.4166
F-statistic	4.40899	Durbin-Watson stat		2.16879
Prob(F-statistic)	0.00335			

CHAPTER FIVE

SUMMARY, CONCLUSIONS & RECOMMENDATIONS

5.1 Introduction

This chapter introduces the summary of the findings as discussed in chapter four, conclusions in view of the findings and lastly gives the recommendations in accordance to the findings from the study.

5.2 Summary of Findings

This section presents the summary of the findings in line with the objectives of the study.

5.2.1 The Shortrun Effect of Refugee Influx on Economic Growth (GDP)

The study sought to establish the shortrun effect of the number of refugees on economic growth. The short run effect was negative and significant. A regression coefficient of -0.0357 (probability = 0.019) depicts that a rise in short run number of refugees by one unit decreases the short run GDP by 0.0357 units. These findings agree with Grindheim (2013) who explored how the foundation of an evacuee camp has affected the facilitating group of Kakuma and its tenants. The findings revealed that there were economic, social, cultural, political and environmental impacts which could contribute to such a result.

The null hypothesis that "*There is no significant effect of number of refugees on GDP* " in the short run **is rejected** and the alternative adopted.

5.2.2 The Longrun Effect of Refugee Influx on Economic Growth (GDP)

The study sought to establish the longrun effect of the number of refugees on economic growth. The long run effect was negative and significant. The number of refugees coefficient reported is -0.0732 and its probability 0.0406. This is a predictor that a unit rise in number of refugees by results to a decrease in GDP by 0. 0732 units. The findings agree with Sesay (2005) who argues that the effect of refugees

mostly relies on the economic outlook of host countries. As such the impact on the economy as a whole would depend on how levels of skills, government policy among others to dictate how these may be accommodated here.
The null hypothesis that "*There is no significant effect of number of refugees on GDP in the long run* " **is rejected** and the alternative adopted.

5.2.3 Extent of the Effect of Other Factors on Economic Growth (GDP)

The study focused on capital, labour and human capital as other factors.The study sought to establish the extent of the shortrun and longrun effect of capital on economic growth. From the long run model, it was found that capital had a negative and insignificant relationship with GDP. The capital coefficient reported is -0.0991 and its probability 0.4105. This infers that a rise or decrease in capital (non human capital) has no effect on GDP. Similarly, results revealed that capital have a positive but insignificant relationship with GDP in the short run. A regression coefficient of 0.02986 (significance = 0.6065) depicts that a unit rise in capital has no effect on GDP in the short run.

The null hypothesis that "*There is no significant effect of capital on GDP*" is accepted.

The study sought to establish the extent of longrun and shortrun effect of labour on economic growth. The longrun effect was positive and significant. The labour coefficient reported is 0.1779 and its probability 0.0448. This is an indication that a unit rise in labour prompts an increment in GDP by 0.1779 units. Similarly, results revealed that labour have a positive and significant relationship with GDP in the short run. A regression coefficient of 0.42982 (probability = 0.0124) infers that a unit rise in labour prompts an increment in the GDP by 0.42982 units in the short run.

The null hypothesis that "*There is no significant effect of labour in the long run on GDP*" is rejected and the alternative adopted.

The null hypothesis that "*There is no significant effect of labour on GDP in the short run*" is rejected and the alternative adopted.

The study sought to determine the extent of of human capital effect on economic growth in longrun and the shortrun . The longrun effect was negative and insignificant relationship with GDP. The human capital coefficient reported is 0.1772 and its probability 0.2516. This is a prediction that an increase in human capital has no effect on GDP. Similarly results showed that the short run human capital have a positive and insignificant relationship with shortrun GDP. A regression coefficient of 0.06852 (probability = 0.7053) depicts that rise in short run human capital by one unit has no effect on the short run GDP.

The null hypothesis that "*There is no significant effect of human capital on GDP in the long run*" is accepted.
The null hypothesis that "*There is no significant effect of human capital on GDP in the short run*" is accepted.

5.3 Conclusions

It was concluded that there was at least one co-integrating equation in the long run. It was also concluded that the lag GDP (denoting the previous period GDP) affects the current period GDP positively. This implies a higher GDP in the previous period leads to an increase in the current period GDP. The results also indicated that both in the long run and short run the number of refugees had a negative and significant relationship with the long-run GDP. Hence, a rise in the number of refugees resulted in a decrease in GDP. The results indicated that both in the long run and short run, labour was positively and significantly related to the GDP in the long-run. Therefore, an increase in labour resulted to an increase in GDP. The other variables were insignificant both in the short run and long run which depicts that change in capital and human capital had no effect on GDP in the the shortrun and longrun possibly due to inflationary pressure, that could counter any positive effects of such human and non human capital on economic growth (Barro, 1995).

5.4 Recommendations

The study gave two recommendations in accordance to the study findings. First given that the effect of the number of refugees on GDP was negative and significant in the long run, the study recommends that the government of Kenya should adopt strategies which aim at minimizing the number of refugees. These strategies may include having stringent laws on registration of refugees with probable reduction in refugee certificate expiry time in a bid to increase aggregate economic growth.

Second, given that the effect of labor on GDP was positive and significant, it is recommended that the government should encourage self employment, investments and innovation through such as encouraging credit administration at subsidised rates since increase in development calls for increased labour force resulting to increase in the aggregate GDP.

5.5 Areas for further Studies

The study has investigated the impact of refugee influx on economic growth in Kenya. The study therefore recommends that further research should be done on the effect of refugee influx on economic growth in the East African Community. This is because the economies of these countries differ and thus allowing for comparison.

Research can also be carried out to identify other issues that arise as a result of refugee influx in Kenya. Such findings can enlighten the government of Kenya on the appropriate policies to formulate so as to ensure balanced effects of the refugees on the social, political and economic climate of the country.

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APPENDICES

Appendix I: Data Set

Year	Ln Capital	Ln Labour	Ln Human Capital	Ln No of Refugees	Ln GDP
1980	7.929843	7.082381	7.268103	9.536762	9.656319
1981	8.023891	7.125846	7.25804	9.383117	9.68265
1982	7.987615	7.155318	7.08189	7.999679	9.598414
1983	7.844998	7.199977	7.005659	8.818778	9.578007
1984	7.879709	7.204075	7.064759	8.994669	9.602848
1985	7.920323	7.287561	7.18071	9.08137	9.659324
1986	8.019002	7.341549	7.262287	8.992184	9.712521
1987	8.004624	7.392832	7.304228	9.225229	9.739217
1988	8.236748	7.448159	7.345073	9.457981	9.764146
1989	8.154092	7.499479	7.273499	8.685078	9.770769
1990	8.325119	7.549083	7.318889	9.564442	9.749907
1991	8.292762	7.846629	7.198629	11.6966	9.693997
1992	8.464393	7.920592	7.132777	12.90469	9.599311
1993	8.547477	8.005767	7.004828	12.61684	9.443548
1994	8.006192	8.118565	6.985544	12.43886	9.415173
1995	8.093527	8.25806	7.117924	12.36591	9.527944
1996	7.929107	8.372352	7.105422	12.31779	9.590575
1997	8.588997	8.454977	7.29304	12.35491	9.648764
1998	8.11353	8.533696	7.211716	9.997797	9.689809
1999	7.915876	8.611157	7.145506	12.31804	9.702436
2000	7.900391	8.691449	7.176007	12.29998	9.677499
2001	8.123222	8.765583	7.201824	12.43645	9.875535
2002	7.982201	8.834453	7.310739	12.37196	9.868455
2003	8.035864	8.899144	7.366542	12.39521	9.869545
2004	7.928596	8.987009	7.333103	12.42645	9.86782
2005	7.899408	9.04841	7.402243	12.49774	9.8786
2006	8.053607	9.104246	7.48279	12.87658	9.956282
2007	8.194698	9.156824	7.565532	12.82529	9.720802
2008	8.117194	9.20571	7.556062	13.9811	9.595287
2009	8.146032	9.254979	7.56354	13.69033	9.522111
2010	8.278988	9.30156	7.697845	13.52942	9.538119
2011	8.318335	9.348031	7.781313	13.73411	9.449682
2012	8.250463	9.390677	7.685948	13.85365	9.466159
2013	8.282984	9.431578	7.754315	13.3166	9.456369
2014	8.284312	9.390677	7.741325	13.65998	9.457426